

### **Amendments to the Claims**

This listing of claims will replace all prior versions and listings of claims in the application:

#### **Listing of Claims:**

Claims 1 – 17 (cancelled)

Claims 18-20 (cancelled)

Claim 21 (currently amended): ~~The method of claim 20, further comprising A~~  
method which may be used for freezing a food product, said method comprising:

- a) freezing at least one surface of the food product, wherein said freezing:
  - 1) comprises bringing said food product into contact with a refrigerating surface;
  - 2) takes place in a treatment container; and
  - 3) results from the use of a vibrating support and a film of a cryogenic liquid placed on said vibrating support, wherein said vibrating support has an upward slope;
- b) providing a first heated temperature probe at a location immediately prior to an exit of said food product from said treatment container, wherein said first heated temperature probe measures a temperature at its location;
- c) providing a cryogenic liquid supply system, wherein said cryogenic liquid supply system comprises a proportional valve;
- d) providing a first data acquisition and processing unit which receives temperature information from said first heated temperature probe, and which can control an opening of said proportional valve; and
- e) ~~further comprising~~ providing a grill, wherein:



- a) said grill is substantially located on said refrigerating surface of said vibrating support; and
- b) said grill removes at least part of said cryogenic liquid from said food products as said food products pass over said grill.

Claim 22 (currently amended): ~~The method of claim 48;~~ A method which may be used for freezing a food product, said method comprising:

- a) freezing at least one surface of the food product, wherein said freezing:
  - 1) comprises bringing said food product into contact with a refrigerating surface;
  - 2) takes place in a treatment container; and
  - 3) results from the use of a vibrating support and a film of a cryogenic liquid placed on said vibrating support;
- b) providing a first heated temperature probe at a location immediately prior to an exit of said food product from said treatment container, wherein said first heated temperature probe measures a temperature at its location;
- c) providing a cryogenic liquid supply system, wherein said cryogenic liquid supply system comprises a proportional valve;
- d) providing a first data acquisition and processing unit which receives temperature information from said first heated temperature probe, which can control an opening of said proportional valve;

further comprising:

- e) [[a]]) providing a product temperature probe, wherein said product temperature probe:
  - 1) is located in the passage of said food products at an exit of said treatment container; and
  - 2) measures a product temperature after freezing; and



- f [[b]]) providing a second data acquisition and processing unit, wherein said second data acquisition and processing unit:
- 1) receives temperature information from said product temperature probe; and
  - 2) controls at least one member selected from the group consisting of:
    - i) an inclination slope of said vibrating support;
    - ii) a frequency of vibration of said vibrating support; and
    - iii) the opening of said proportional valve.

Claim 23 (currently amended): ~~The method of claim 18;~~ A method which may be used for freezing a food product, said method comprising:

- a) freezing at least one surface of the food product, wherein said freezing:
  - 1) comprises bringing said food product into contact with a refrigerating surface;
  - 2) takes place in a treatment container; and
  - 3) results from the use of a vibrating support and a film of a cryogenic liquid placed on said vibrating support;
- b) providing a first heated temperature probe at a location immediately prior to an exit of said food product from said treatment container, wherein said first heated temperature probe measures a temperature at its location;
- c) providing a cryogenic liquid supply system, wherein said cryogenic liquid supply system comprises a proportional valve;
- d) providing a first data acquisition and processing unit which receives temperature information from said first heated temperature probe, and which can control an opening of said proportional valve;

further comprising:



- e [[a]]) providing a safety temperature probe in said treatment container, wherein said safety temperature probe:
- 1) is located slightly in front of said food product's exit from said treatment container; and
  - 2) measures a temperature at its location;
- f [[b]]) providing an on/off valve for said cryogenic liquid supply system; and
- g [[c]]) providing a third data acquisition and processing unit, wherein said third data acquisition and processing unit:
- 1) receives temperature information from said safety temperature probe; and
  - 2) can control said on/off valve in order to open or close said on/off valve.

Claim 24 (previously presented): The method of claim 23, wherein said safety temperature probe is a heated probe.

Claim 25 (cancelled)

Claim 26 (previously presented): The method of claim 24, wherein:

- a) said safety temperature probe or said first heated temperature probe is a double probe comprising a first and a second resistor;
- b) said first resistor is connected to an instrument which measures resistance and deduces said temperature from a conversion table; and
- c) said second resistor is supplied with a voltage which generates heat.

Claim 27-30 (cancelled)

Claim 31 (currently amended): ~~The apparatus of claim 30,~~ An apparatus which may be used to freeze a product, said apparatus comprising:



- a) a treatment container for at least one product, wherein said treatment container comprises:
  - 1) a vibrating support capable of receiving a film of a cryogenic liquid, wherein said vibrating support has an upward slope;
  - 2) an inlet; and
  - 3) an outlet;
- b) a first heated temperature probe located before said outlet, wherein said first heated temperature probe measures a temperature at its location;
- c) a supply system for said cryogenic liquid, wherein said supply system comprises a proportional valve;
- d) a first data acquisition and processing unit, wherein said first data acquisition and processing unit is capable of:
  - 1) receiving temperature information from said first heated temperature probe; and
  - 2) controlling an opening of said proportional valve; and
- e) further comprising a grill substantially located on a surface of said vibrating support, wherein said grill is capable of filtering at least part of said cryogenic liquid contained in said product as said product passes over said grill.

Claim 32 (currently amended): ~~The apparatus of claim 27,~~ An apparatus which may be used to freeze a product, said apparatus comprising:

- a) a treatment container for at least one product, wherein said treatment container comprises:
  - 1) a vibrating support capable of receiving a film of a cryogenic liquid;
  - 2) an inlet; and
  - 3) an outlet;







- 2) an inlet; and
  - 3) an outlet;
- b) a first heated temperature probe located before said outlet, wherein said first heated temperature probe measures a temperature at its location;
- c) a supply system for said cryogenic liquid, wherein said supply system comprises a proportional valve;
- d) a first data acquisition and processing unit, wherein said first data acquisition and processing unit is capable of:
  - 1) receiving temperature information from said first heated temperature probe; and
  - 2) controlling an opening of said proportional valve;

further comprising:

- e [[a]]) an on/off valve for said supply system;
- f [[b]]) a safety temperature probe located near said outlet, wherein said safety temperature probe is capable of measuring a temperature at its location; and
- g [[c]]) a third data acquisition and processing unit, wherein said third data acquisition and processing unit:
  - 1) is capable of receiving temperature information from said safety temperature probe; and
  - 2) is capable of controlling the opening or closing of said on/off valve.

Claim 34 (previously presented): The apparatus of claim 33, wherein said safety temperature probe is a heated probe.



Claim 35 (previously presented): The apparatus of claim 34, wherein:

- a) said safety temperature probe or said first heated temperature probe is a double probe comprising a first and a second resistor;
- b) said first resistor is connected to an instrument which measures resistance and deduces said temperature from a conversion table; and
- c) said second resistor is supplied with a voltage which generates heat.

Claim 36 (previously presented): An apparatus which may be used to freeze a product, said apparatus comprising:

- a) a treatment container for at least one product, wherein said treatment container comprises:
  - 1) a vibrating support capable of receiving a film of a cryogenic liquid;
  - 2) an inlet; and
  - 3) an outlet;
- b) a first heated temperature probe located before said outlet, wherein said first heated temperature probe measures a temperature at its location;
- c) a supply system for said cryogenic liquid, wherein said supply system comprises a proportional valve;
- d) a first data acquisition and processing unit, wherein said first data acquisition and processing unit is capable of:
  - 1) receiving temperature information from said first heated temperature probe; and
  - 2) influencing an opening of said proportional valve;
- e) a product temperature probe located near said outlet, wherein said product temperature probe is capable of measuring a temperature of said product as it leaves said treatment container;



- f) a second data acquisition and processing unit, wherein said second data acquisition and processing unit:
  - 1) receives temperature information from said product temperature probe; and
  - 2) controls at least one member selected from the group consisting of:
    - i) an inclination slope of said support;
    - ii) a frequency of vibration of said support; and
    - iii) the opening of said proportional valve;
- g) an on/off valve for said supply system;
- h) a safety temperature probe located near said outlet, wherein said safety temperature probe is a heated probe capable of measuring a temperature at its location; and
- i) a third data acquisition and processing unit, wherein said third data acquisition and processing unit:
  - 1) is capable of receiving temperature information from said safety temperature probe; and
  - 2) is capable of influencing an opening or closing of said on/off valve.

Claim 37 (previously presented): The apparatus of claim 36, wherein:

- a) said safety temperature probe or said first heated temperature probe is a double probe comprising a first and a second resistor;
- b) said first resistor is connected to an instrument which measures resistance and deduces said temperature from a conversion table; and
- c) said second resistor is supplied with a voltage which generates heat.